

Labor Market Analysis for Program Recommendation:
 1303.20/Fashion Merchandising
 (Fashion Merchandising Associate in Arts Degree)
 (Fashion Merchandising Certificate)
 Orange County Center of Excellence, May 2024



Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some LMI Criteria Met <input type="checkbox"/>	Not LMI Endorsed <input type="checkbox"/>
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Program LMI Endorsement Criteria

	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Supply Gap:	<i>Comments:</i> There are projected to be 3,200 annual job openings throughout Los Angeles and Orange counties for these fashion merchandising occupations, which is more than the 915 awards conferred by educational institutions.	
Living Wage: (Entry-Level, 25 th)	<i>Comments:</i> Nearly 73% of annual job openings for these fashion merchandising occupations have entry-level hourly wages above the OC living wage of \$20.63.	
Education:	<i>Comments:</i> Though the majority (72%) of annual openings for these occupations typically require a bachelor's degree, 25% and 34% of workers in the field have completed some college or an associate degree as their highest level of education.	

Emerging Occupation(s)

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<i>Comments:</i> N/A	

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to three fashion merchandising occupations:

- Below Middle-Skill – denoted with a carrot (^) throughout this report.
 - *Merchandise Displayers and Window Trimmers (27-1026)*[^]
- Middle-Skill
 - *Buyers and Purchasing Agents (13-1028)*
 - *Fashion Designers (27-1022)*

Middle-skill occupations typically require a community college education while below middle-skill occupations usually request up to a high school diploma or equivalent. Though OC COE labor market analysis reports typically focus on middle-skill occupations, the below middle-skill occupation included in this report aligns with the program objectives. Additionally, students can obtain employment in this below middle-skill occupation with a community college education. Therefore, the endorsement of this report considers data for both the below middle-skill and middle-skill occupations.

Based on the available data, there appears to be a supply gap for these fashion merchandising occupations. In addition, the majority of annual openings have entry-level wages above the living wage and typical education requirements for these occupations align with a community college education. **Therefore, due to all regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25 th Percentile)	Typical Entry-Level Education	Community College Educational Attainment
Merchandise Displayers and Window Trimmers (27-1026)	LA: 667	LA: 0	OC: \$18.01	High school diploma or equivalent	25%
	OC: 235	OC: 0			
Below Middle-Skill Total	903	0	N/A	N/A	N/A
Buyers and Purchasing Agents (13-1028)	LA: 1,266	LA: 434	OC: \$27.50	Bachelor's degree	34%
	OC: 515	OC: 43			
	TTL: 1,782	TTL: 477			
Fashion Designers (27-1022)	LA: 406	LA: 373	OC: \$28.06	Bachelor's degree	26%
	OC: 110	OC: 65			
	TTL: 516	TTL: 439			
Middle-Skill Total	2,297	915	N/A	N/A	N/A
Total	3,200	915	N/A	N/A	N/A

Demand:

- The number of jobs related to these fashion merchandising occupations are projected to decrease 2% through 2027, resulting in 3,200 projected annual job openings.
- Hourly entry-level wages for these fashion merchandising occupations range from \$18.01 to \$28.06 in Orange County; however, nearly 68% annual job openings have entry-level wages above the living wage.
- There were 12,542 online job postings for these occupations over the past 12 months. The highest number of postings were for retail merchandisers, merchandisers, and buyers.
- The typical entry-level education for these fashion merchandising occupations ranges from a high school diploma or equivalent to a bachelor's degree.
- Between 25% and 34% of workers in these occupations have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 338 awards conferred by 10 community colleges in Los Angeles and Orange Counties from 2019 to 2022.
- Non-community college institutions conferred an average of 578 awards from 2019 to 2021.

- Orange County community college students that exited fashion merchandising programs in the 2020-21 academic year had a median annual wage of \$31,888 (\$15.33 per hour) after exiting the program and 36% attained the regional living wage.
- Due to insufficient data, the percentage of Orange County fashion merchandising students that exited their program in 2019-20 and reported that they are working in a job closely related to their field of study is not available.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for all three fashion merchandising occupations researched in this report from 2017 through 2027. Though there was a 7% decline across all occupations from 2019 to 2020 in Los Angeles and Orange counties due to the COVID-19 pandemic, employment for the three fashion merchandising occupations decreased 6% in Orange County during the same period but experienced a significant spike through 2021 and continued increase through 2022.

In the three years preceding the pandemic, employment for these occupations in Orange County fluctuated from experiencing a plateau to undergoing a decrease, followed by a sizeable increase in 2019. After a steep decline in employment from 2019 to 2020 and increases through 2022, employment is projected to plateau through 2027.

Exhibit 2: Annual Percent Change in Jobs for Fashion Merchandising Occupations, 2017-2027

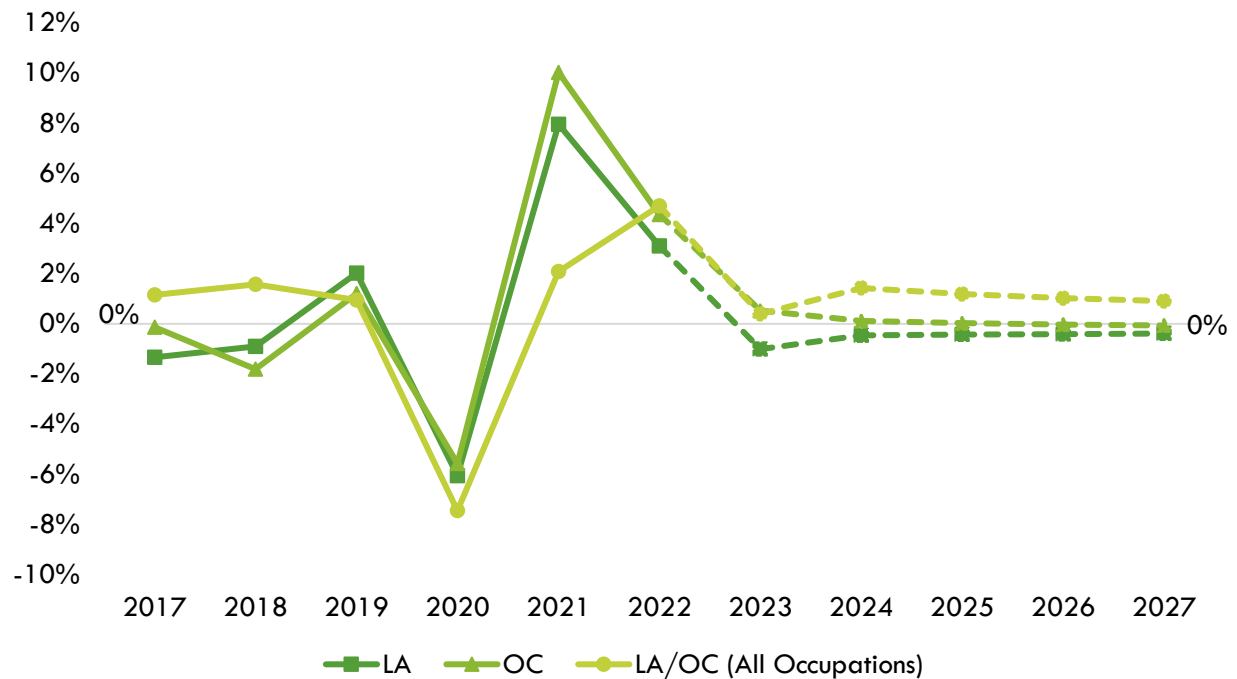


Exhibit 3 shows the five-year occupational demand projections for *merchandise displayers and window trimmers*¹, the only below middle-skill occupation included in this report. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase 2% through 2027. There is projected to be 903 jobs available annually.

Exhibit 3: Below Middle-Skill Occupational Demand in Los Angeles and Orange Counties

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	5,642	5,668	27	0%	667
Orange	1,770	1,881	111	6%	235
Total	7,412	7,550	138	2%	903

Exhibit 4 shows the five-year occupational demand projections for the two middle-skill occupations analyzed in this report. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease 3% through 2027. There is projected to 2,297 jobs available annually due to retirements and replacements.

Exhibit 4: Middle-Skill Occupational Demand in Los Angeles and Orange Counties¹

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	18,949	18,267	(683)	(4%)	1672
Orange	6,870	6,808	(61)	(1%)	625
Total	25,819	25,075	(744)	(3%)	2,297

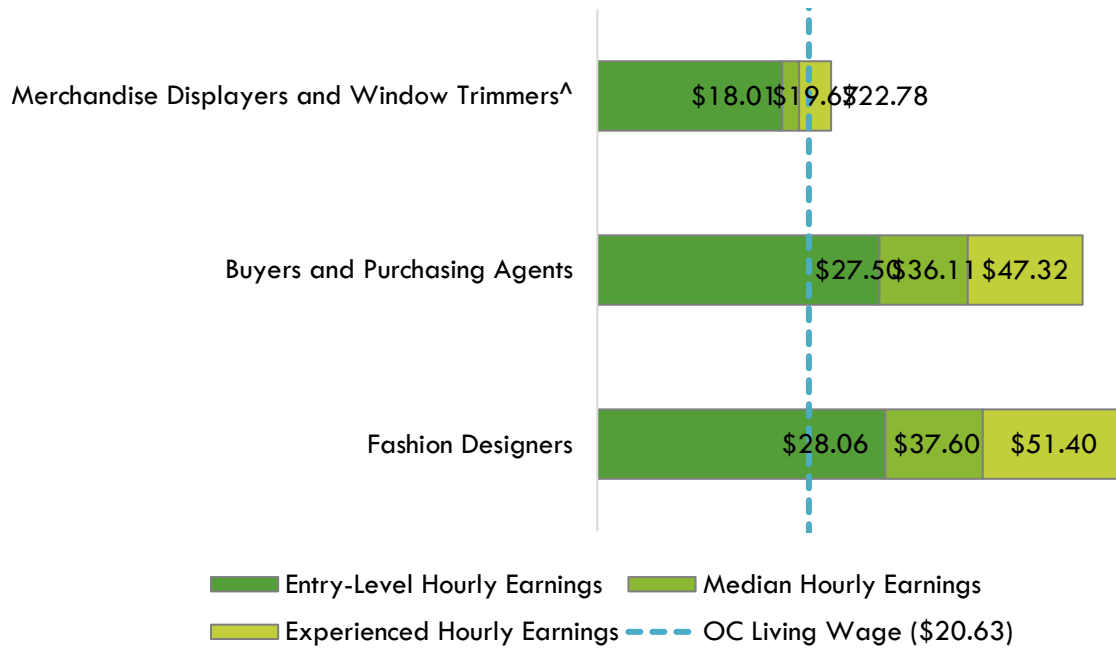
Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these fashion merchandising occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

Nearly 73% of all annual openings for these fashion merchandising occupations have entry-level wages above the living wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages range between \$18.01 and \$28.06. Orange County's average wages of \$35.45 are above the average statewide wage of \$34.75 for these occupations. Exhibit 5 shows the wage range for each of the three fashion merchandising occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

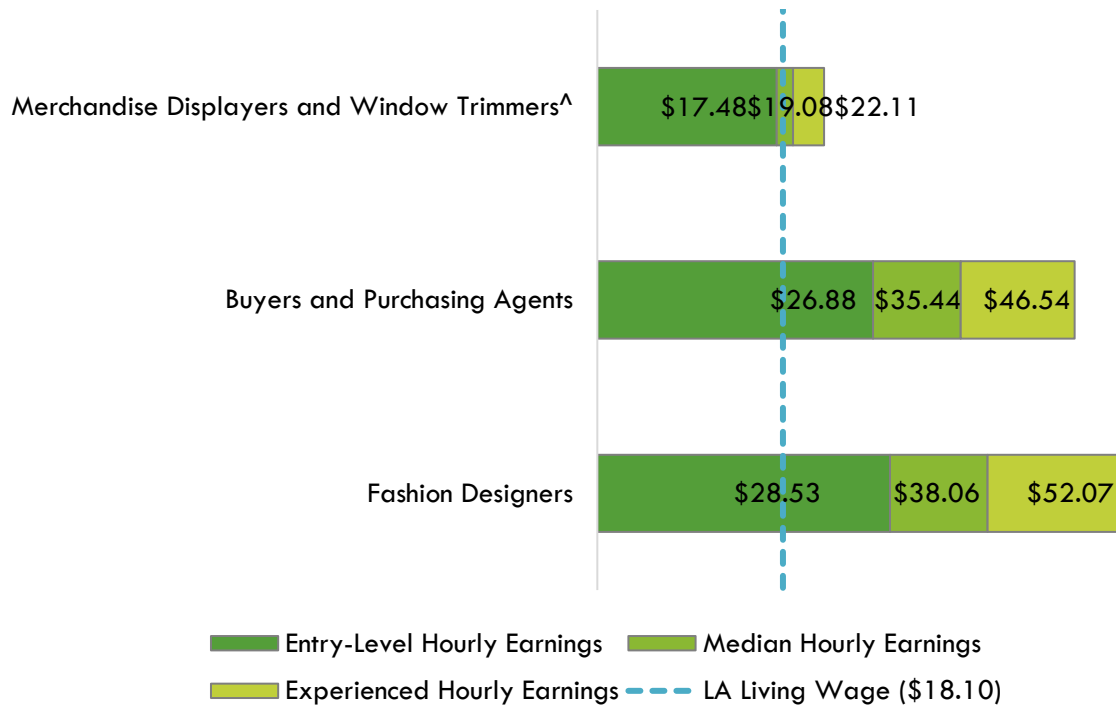
¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 3: Wages by Occupation in Orange County



Nearly 71% of all annual openings for these fashion merchandising occupations have entry-level wages above the living wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$17.48 and \$28.53. Los Angeles County’s average wages of \$34.14 are identical to the statewide wage for these occupations. Exhibit 6 shows the wage range for each of the five fashion merchandising occupations in Los Angeles County how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 4: Wages by Occupation in Los Angeles County



Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.² For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast’s database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 12,542 online job postings related to the three fashion merchandising occupations listed in the past 12 months. Of those, over half (52%) were for buyers and purchasing agents, followed by merchandising displayers and window trimmers, which accounted for 42% of postings. Exhibit 7 shows the number of job postings by occupation.

Exhibit 5: Number of Job Postings by Occupation (n=12,542)

Occupation	Job Postings	Percentage of Job Postings
Buyers and Purchasing Agents	6,489	52%
Merchandise Displayers and Window Trimmers	5,281	42%
Fashion Designers	772	6%
Total Postings	12,542	100%

The top employers for *merchandise displayers and window trimmers*^A in the region, by number of job postings, are shown in Exhibit 8.

Exhibit 6: Top Below Middle-Skill Employers by Number of Job Postings (n=5,281)

Employer	Job Postings	Percentage of Job Postings
SAS Retail Services	368	7%
Crossmark	234	4%
Walmart	171	3%
Retail Odyssey	164	3%
Lowe’s	125	2%
The Coca-Cola Company	123	2%
Jacent Strategic Merchandising	109	2%
Stellantis	102	2%
Southern Glazer’s	98	2%
BDS Marketing	97	2%

² K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

The top employers for the two middle-skill fashion merchandising occupations in the region, by number of job postings, are shown in Exhibit 9.

Exhibit 7: Top Middle-Skill Employers by Number of Job Postings (n=7,247)

Employer	Job Postings	Percentage of Job Postings
University of California	157	2%
Northrop Grumman	129	2%
Aston Carter	87	1%
Robert Half	65	1%
Southern California Edison	63	1%
Disney	56	1%
Boeing	55	1%
California State University	38	1%
AppleOne	37	1%
Molina Healthcare	36	0%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *merchandise displayers and window trimmers*[^] in Exhibit 10.

Exhibit 8: Top Skills for Below Middle-Skill Occupation by Number of Job Postings (n=5,281)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Merchandising (4,033)	Sales (2,350)	Microsoft Excel (469)
Planogram (607)	Management (1,921)	Microsoft PowerPoint (261)
Visual Merchandising (537)	Communication (1,875)	Microsoft Outlook (225)
Marketing (532)	Customer Service (1,422)	Microsoft Office (181)
Selling Techniques (476)	Lifting Ability (1,053)	Apple IOS (115)
Inventory Management (468)	Detail Oriented (839)	SAS (Software) (106)
Product Knowledge (432)	Self-Motivation (541)	Adobe Photoshop (67)
Auditing (354)	Time Management (533)	Adobe Illustrator (64)
Stocking Merchandise (340)	English Language (515)	Markdown (51)
New Product Development (338)	Leadership (509)	Microsoft Word (49)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for the four middle-skill occupations in Exhibit 11.

Exhibit 9: Top Skills for Middle-Skill Occupations by Number of Job Postings (n=7,247)

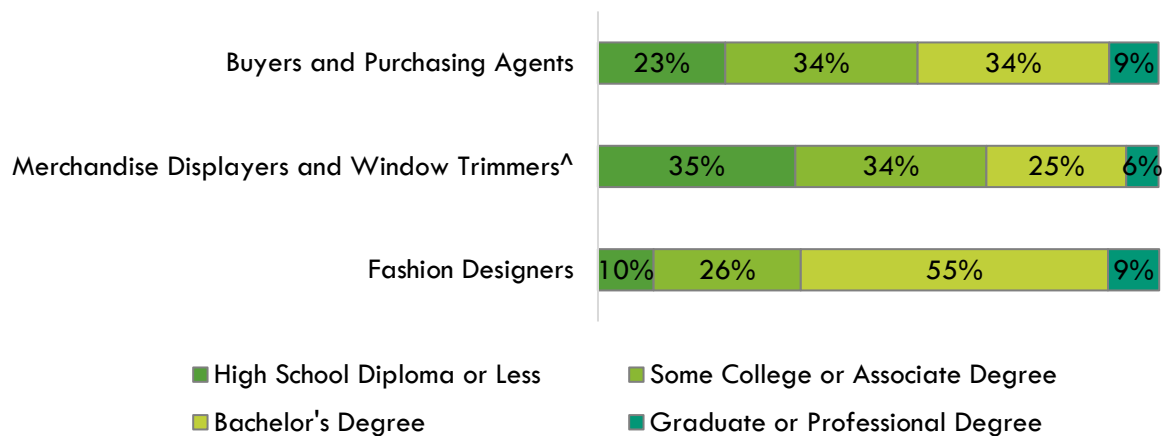
Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
Purchasing (2,703)	Communication (3,363)	Microsoft Excel (1,994)
Procurement (2,315)	Management (2,847)	Microsoft Office (1,485)
Contract Management (1,180)	Negotiation (2,056)	Microsoft PowerPoint (1,002)

Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
Finance (1,035)	Detail Oriented (2,002)	Microsoft Outlook (755)
Project Management (983)	Microsoft Excel (1,994)	Microsoft Word (600)
Accounting (961)	Sales (1,525)	SAP Applications (550)
Invoicing (956)	Microsoft Office (1,485)	Adobe Illustrator (464)
Supply Chain (939)	Customer Service (1,459)	Adobe Photoshop (374)
Request For Proposal (784)	Writing (1,340)	Spreadsheets (365)
Marketing (776)	Problem Solving (1,323)	Microsoft SharePoint (185)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *merchandise displayers and window trimmers* ^ and a bachelor's degree for *buyers and purchasing agents* and *fashion designers*. The national-level educational attainment data indicates between 26% to 34% of workers in these occupations have completed some college or an associate degree as their highest level of education. Exhibit 12 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 10: National-level Educational Attainment for Occupations



Of the 33% of the postings for the below middle-skill occupation that listed a minimum education requirement, 66% (1,136) requested a high school diploma or an associate degree and 34% (585) requested a bachelor's degree.

Conversely, of the 67% of the cumulative job postings for the middle-skill occupations that listed a minimum education requirement in Los Angeles/Orange County, 76% (3,654) requested a bachelor's degree and 24% (1,170) requested a high school diploma or an associate degree.

Educational Supply

Community College Supply:

Exhibit 13 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Display (0509.60), Fashion (1303.00), Fashion Design (1303.10), Fashion Merchandising (1303.20), and Fashion Production (1303.30). No awards were conferred for the following related TOP codes: Viticulture, Enology, and Wine Business (0104.00), Agriculture Business, Sales and Service (0112.00), and Purchasing (0509.20).

The colleges with the most completions in the region are LA Trade, Santa Monica, and Mt. San Antonio. Over the past 12 months, there were two other related program recommendation requests from regional community colleges.

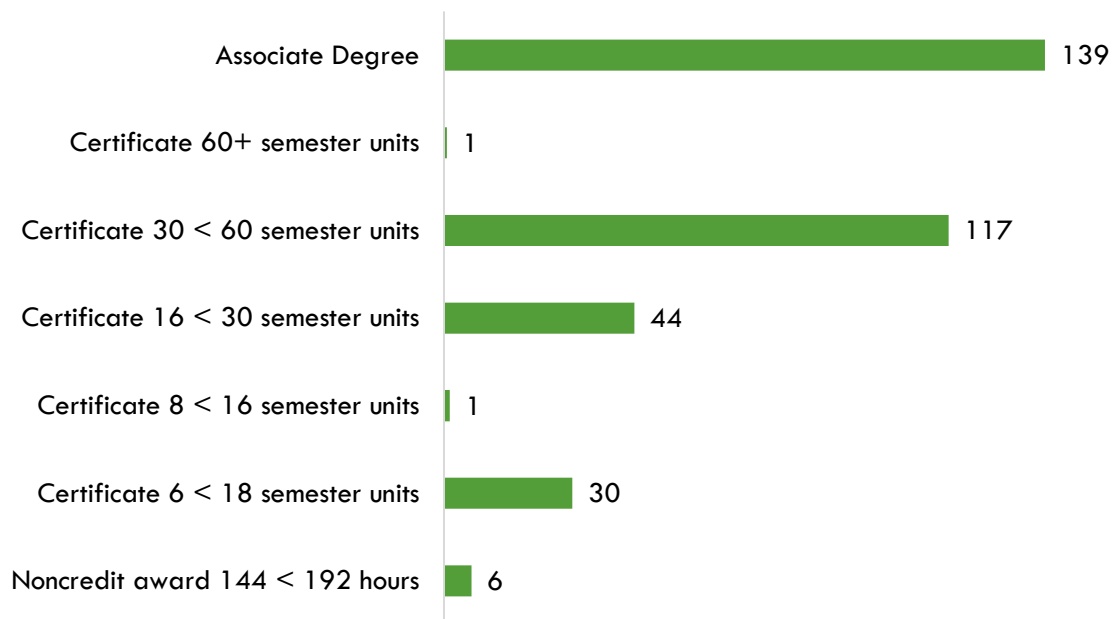
Exhibit 11: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
0509.60	Display	-	-	-	-	-
		LA Subtotal	-	-	-	-
		Orange Coast	0	1	0	0
		OC Subtotal	0	1	0	0
Supply Subtotal/Average			0	1	0	0
1303.00	Fashion	El Camino	4	6	6	5
		Pasadena	19	18	27	21
		LA Subtotal	23	24	33	27
		Fullerton	2	5	0	2
		Orange Coast	0	13	3	5
		Santa Ana	11	6	13	10
		OC Subtotal	13	24	16	18
Supply Subtotal/Average			36	48	49	44
1303.10	Fashion Design	El Camino	0	1	1	1
		LA Trade	65	63	53	60
		Long Beach	7	4	8	6
		Mt San Antonio	55	8	8	24
		Santa Monica	25	26	33	28
		LA Subtotal	152	102	103	119
		Fullerton	6	5	5	5
		Orange Coast	8	8	15	10
		Saddleback	17	7	10	11
		Santa Ana	7	2	6	5
		OC Subtotal	38	22	36	32
		Supply Subtotal/Average			190	124

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
1303.20	Fashion Merchandising	El Camino	4	5	0	3
		LA Trade	9	21	11	14
		Long Beach	10	15	4	10
		Mt San Antonio	28	19	26	24
		Santa Monica	40	27	24	30
		LA Subtotal	91	87	65	81
		Fullerton	8	12	7	9
		Orange Coast	19	13	16	16
		Saddleback	2	17	19	13
		Santa Ana	4	4	7	5
		OC Subtotal	33	46	49	43
Supply Subtotal/Average			124	133	114	124
1303.30	Fashion Production	LA Trade	3	1	4	3
		LA Subtotal	3	1	4	3
		Fullerton	3	1	1	2
		Orange Coast	14	4	17	12
		Santa Ana	0	3	4	2
		OC Subtotal	17	8	22	16
Supply Subtotal/Average			20	9	26	18
Supply Total/Average			370	315	328	338

Exhibit 14 shows the annual average community college awards by type from 2019-20 through 2021-22. The plurality of the awards are for associate degrees, followed by certificates between 30 and less than 60 semester units and certificates between 16 and less than 30 semester units.

Exhibit 12: Annual Average Community College Awards by Type, 2019-2022



Community College Student Outcomes:

Exhibit 15 shows the Strong Workforce Program (SWP) metrics for fashion merchandising programs in North Orange County Community College District (NOCCCD), the Orange County Region, and California. Due to insufficient data, the percentage of fashion merchandising students in Orange County who attended an NOCCCD college is unavailable.

Orange County students that exited fashion merchandising programs in the 2020-21 academic year higher median annual earnings (\$31,888 or \$15.33 per hour) compared to all fashion merchandising students in the state (\$28,412 or \$13.66 per hour). A slightly higher percentage of Orange County fashion merchandising students attained the living wage (36%) when compared to all fashion merchandising students in California (35%).

Exhibit 13: Fashion Merchandising (1303.20) Strong Workforce Program Metrics, 2020-21³

SWP Metric	NOCCCD	OC Region	California
SWP Students	Insufficient Data	360	1,556
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	Insufficient Data	48%	40%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	Insufficient Data	Insufficient Data	68%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	10	33	153

³ All SWP metrics are for 2020-21 unless otherwise noted.

SWP Metric	NOCCCD	OC Region	California
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	Insufficient Data	20	60
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	Insufficient Data	Insufficient Data	55%
Median Annual Earnings for SWP Exiting Students	Insufficient Data	\$31,888	\$28,412
Median Change in Earnings for SWP Exiting Students	Insufficient Data	154%	65%
SWP Exiting Students Who Attained the Living Wage	Insufficient Data	36%	35%

Non-Community College Supply:

To comprehensively analyze the regional supply, it is crucial to include data from other institutions offering fashion training programs. Exhibit 16 displays the annual and two-year average awards granted by these institutions under the related Classification of Instructional Programs (CIP) Codes:

- Apparel and Textile Manufacturing (19.0902)
- Apparel and Textile Marketing Management (19.0905)
- Fashion/Apparel Design (50.0407)
- Costume Design (50.0510)
- Fashion Merchandising (52.1902)
- Apparel and Accessories Marketing Operations (52.1904)

No awards were conferred for the following related CIP codes:

- Agricultural/Farm Supplies Retailing and Wholesales (01.0105)
- Wine Steward/Sommelier (12.0510)
- Fashion and Fabric Consultant (19.0906)
- Purchasing, Procurement/Acquisition and Contracts Management (52.0202)
- Merchandising and Buying Operations (52.1802)
- General Merchandising, Sales, and Related Marketing Operations, Other (52.1899)
- Fashion Modeling (52.1903)

The available data covers 2019 to 2021. During this period, non-community college institutions in the region conferred an average of 578 awards annually in related training programs.

Exhibit 14: Regional Non-Community College Awards, 2019-2021

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2-Year Award Average
19.0902	Apparel and Textile Manufacturing	Beverly Hills Design Institute	2	1	2
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	19	11	15
Supply Subtotal/Average			21	12	17

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2-Year Award Average
19.0905	Apparel and Textile Marketing Management	FIDM-Fashion Institute of Design & Merchandising-Los Angeles	66	43	55
Supply Subtotal/Average			66	43	55
50.0407	Fashion/Apparel Design	Beverly Hills Design Institute	1	0	1
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	164	143	154
		Otis College of Art and Design	21	25	23
		Woodbury University	10	10	10
Supply Subtotal/Average			196	178	187
50.0510	Costume Design	California Institute of the Arts	3	0	2
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	19	21	20
Supply Subtotal/Average			22	21	22
52.1902	Fashion Merchandising	FIDM-Fashion Institute of Design & Merchandising-Los Angeles	314	262	288
Supply Subtotal/Average			314	262	288
52.1904	Apparel and Accessories Marketing Operations	Woodbury University	10	10	10
Supply Subtotal/Average			10	10	10
Supply Total/Average			629	526	578

Regional Demographics

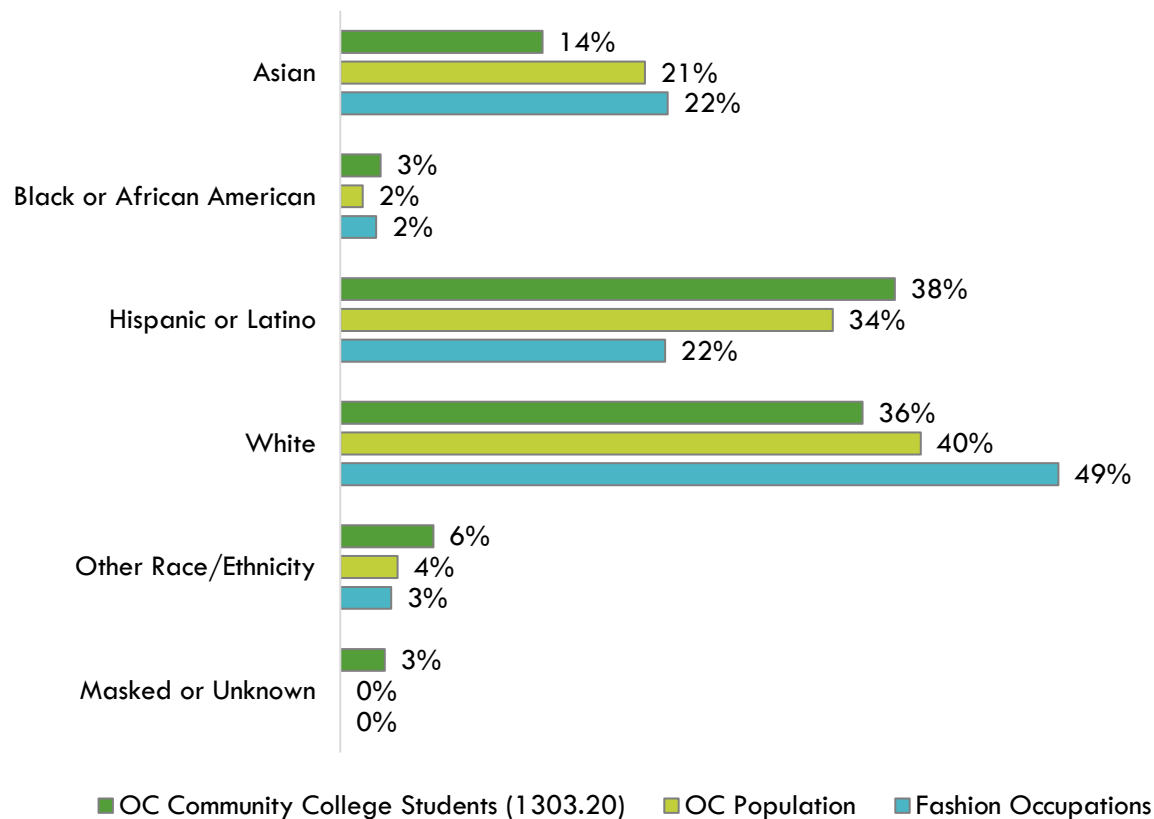
This section examines demographic data for Orange County community college students in fashion merchandising programs compared to the OC population, along with occupational data, to identify potential diversity and equity issues addressable by community college programs.

Ethnicity:

Exhibit 17 compares the ethnicity of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population, and occupation-specific data for the three fashion occupations included in this report. Nearly half (49%) of workers employed in these fashion occupations are white, which is higher than the population (40%) and significantly higher than community college fashion merchandising students (36%). Conversely, the plurality (38%) of community college fashion merchandising students are Hispanic or Latino, which is higher than the Orange County population (34%) and significantly higher than workers in these fashion occupations (22%). Though Asian representation in these occupations (22%) is nearly equivalent to the population (21%), both figures are higher than community college fashion merchandising students (14%).

Examining disaggregated data for each occupation (not shown), white individuals account for half of *buyers and purchasing agents* (50%) and the plurality of *fashion designers* (43%). These occupations have the highest (\$28.06) and second highest (\$27.50) entry-level wages, respectively, and they require the highest entry-level education of all three fashion occupations. Conversely, half (50%) of *merchandise displayers and window trimmers* are Hispanic or Latino. This occupation has the lowest entry-level wages (\$18.01) and education requirements amongst all three fashion merchandising occupations.

Exhibit 15: Program and County Demographics by Ethnicity



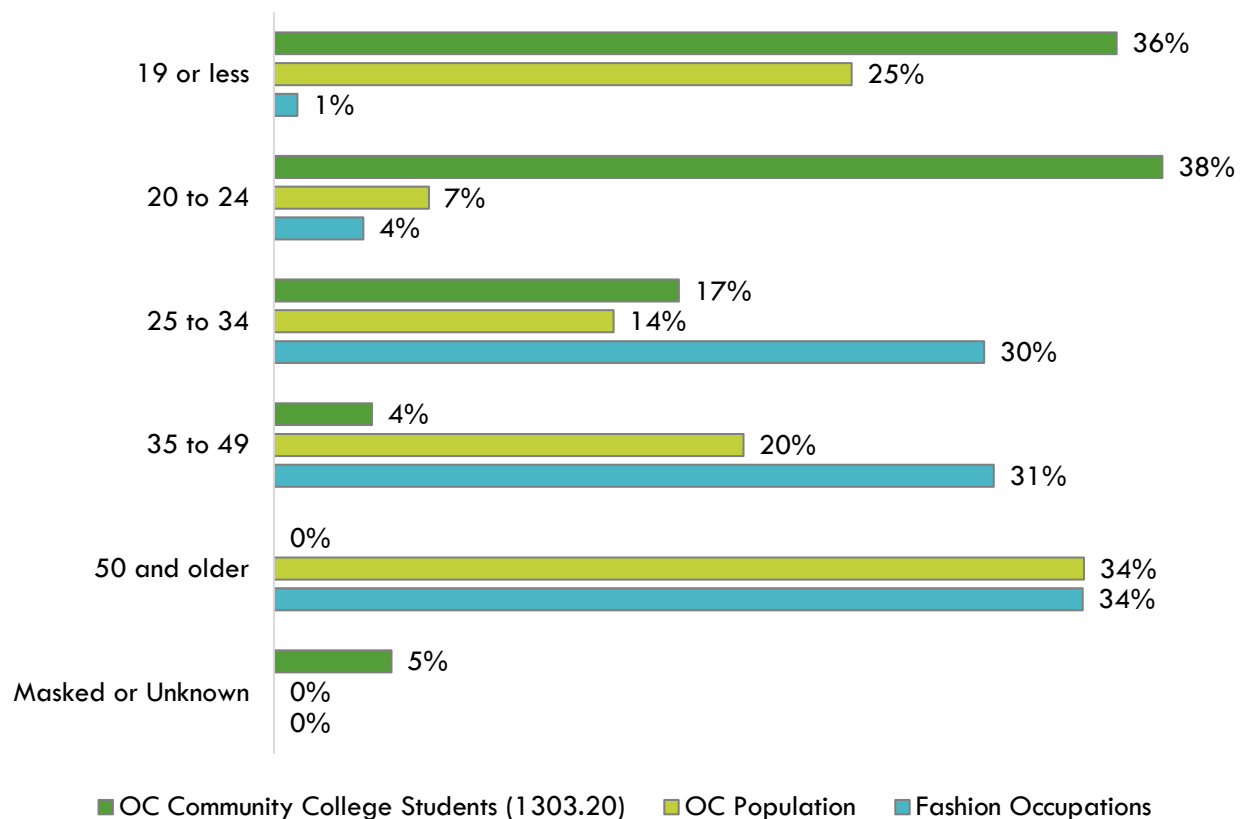
Age:

Exhibit 18 compares the age of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population, and occupation-specific data for the three fashion occupations included in this report.

The majority of workers in these fashion occupations are age 35 and older (65%), which is higher than the population (54%) and 61 percentage points more than community college fashion merchandising students (4%). Alternatively, though only 5% of workers in these occupations are 24 or less, this age group accounts for the majority of community college fashion merchandising students (74%) and nearly one-third of the county population (32%).

Examining disaggregated data for each occupation (not shown), individuals 50 and older represent the plurality (36%) of *buyers and purchasing agents*, which has the highest entry-level wages of all three fashion merchandising occupations.

Exhibit 16: Program and County Demographics by Age

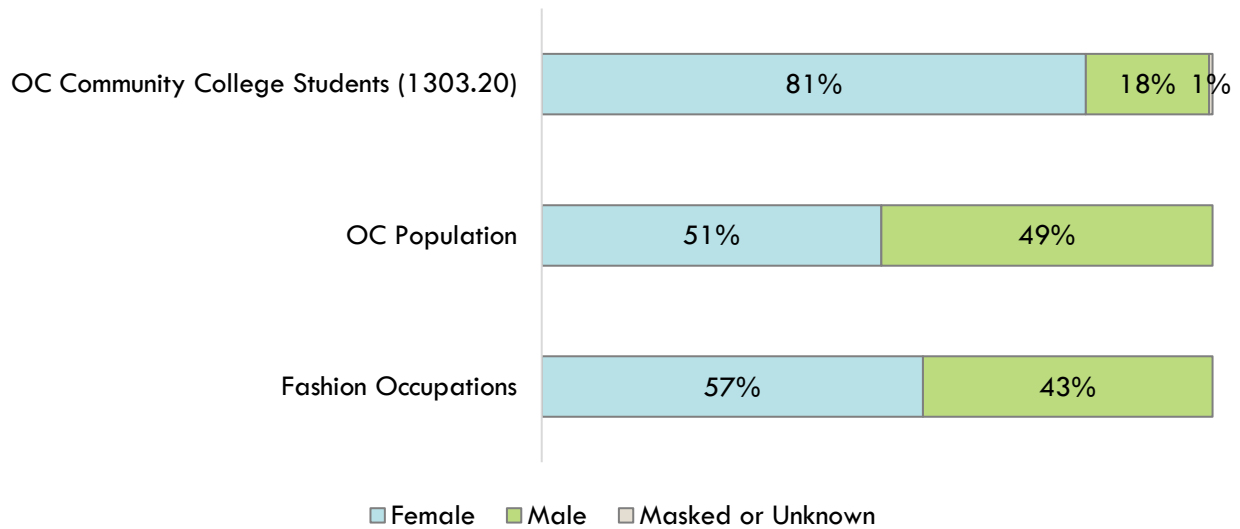


Sex:

Exhibit 19 compares the sex of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population and occupation-specific data for the three fashion occupations included in this report.

Though the population is nearly split evenly between men and women, 81% of community college fashion merchandising students and 57% of workers in the field are women. Examining disaggregated data for each occupation (not shown), the majority of workers in each occupation are women. Nearly 76% of *fashion designers* and 55% of *buyers and purchasing agents*, as well as *merchandise displayers and window trimmers*[^] are women.

Exhibit 17: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	<p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/</p>
Living Wage	<p>The living wage is derived from the Insight Center’s California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightccd.org/family-needs-calculator/</p> <p>The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>
Typical Education and Training Requirements, and Educational Attainment	<p>The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm</p>
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	<p>The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p>
Educational Supply	<p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p>
Student Metrics and Demographics	<p>LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx</p>

Data Type	Source
Population and Occupation Demographics	<p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p>

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